

ABSTRACT OF THE DISCLOSURE

In Switches, switch inputs and outputs may be grouped into (e.g., small) modules called input shared blocks (or "ISBs") and output shared blocks (or "OSBs"), respectively. Each of the switches includes three (3) main parts: (i) input shared blocks (ISBs); (ii) a central switch fabric (or "ATMCSF"); and (iii) output shared blocks (OSBs). Input link sharing at every ISB-ATMCSF interface and output link sharing at every ATMCSF-OSB interface cooperate intelligently to resolve output contention and essentially eliminate any speedup requirement in central switch fabric. Each of the proposed switches can easily scale to a large size by cascading additional input and output shared blocks (ISBs and OSBs). Instead of using a centralized scheduler to resolve input and output contention, the each of the switches applies a distributed link reservation scheme upon which cell scheduling is based. In one embodiment, a dual round robin dynamic link reservation technique, in which an input shared block (ISB) only needs its local available information to arbitrate potential modification for its own link reservation, may be used.

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